5
SIGNIFICANCE EVALUATION AND RECOMMENDATIONS

5.1 REGULATORY CONTEXT

This chapter presents Æ's evaluation of the Line 108 Suspension Bridge over the Cosumnes River. This structure is evaluated for eligibility to the National Register of Historic Places (NRHP) according to the criteria set forth in 36 CFR 60.4 and guidance provided by the National Park Service in the National Register Bulletin 15, *How to Apply the National Register Criteria for Evaluation* (National Park Service [NPS] 2002).

The National Park Service has established guidelines for evaluating NRHP eligibility. The basic steps in the evaluation process include:

- Identifying the theme, period, and context within which the property is significant;
- Determining which National Register significance criteria are applicable; and
- Judging whether the property retains integrity (NPS 2002:Part III).

The National Register eligibility criteria, as described in 36 CFR 60.4, state:

> The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and
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> (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
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> (b) that are associated with the lives of persons significant in our past; or
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> (c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
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> (d) that have yielded, or may be likely to yield, information important in prehistory or history.

Prior to assessing a resource's potential for listing on the NRHP, it is important to understand the subtleties of the seven aspects of integrity, which are defined as follows:

> Location is the place where the historic property was constructed or the place where the historic event occurred. . . .
>
> Design is the combination of elements that create the form, plan, space, structure, and style of a property. . . .

> Setting is the physical environment of a historic property. . . .
>
> Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property. . . .
>
> Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory. . . .
>
> Feeling is a property's expression of the aesthetic or historic sense of a particular period of time. . . .
>
> Association is the direct link between an important historic event or person and a historic property. . . [NPS 2002:Part VIII].

"Integrity is based on significance: why, where, and when a property is important" (NPS 2002:Part VIII). Only after significance is fully established is the issue of integrity addressed. Ultimately, the question of integrity is answered by whether or not the property retains the identity for which it is significant.

5.2 HISTORICAL THEMES AND PERIOD OF SIGNIFICANCE

In 1932, during construction of the Vernalis-Sacramento high-pressure natural gas Line 108, the PG&E General Construction Department constructed this suspension bridge to carry the pipeline across the Cosumnes River. This construction occurred when PG&E was expanding its gas line network into the Central Valley, with an eye toward Sacramento. This line remained relatively unchanged until recently, when failing pipes prompted an 11-mile section of the line to be inactivated. The portion of inactive line that was carried by the subject bridge was removed.

This bridge is associated with the fledgling pipeline construction and industrial engineering fields of the 1930s. The construction and engineering fields both advanced after this bridge was built. However, the structure remains an important, tangible marker in the evolution of these fields.

The bridge is associated with the themes of **Bridge Construction in the Early Twentieth Century** and **Natural Gas Pipeline Construction in the Early Twentieth Century**. The period of significance is the 1930s, when the bridge was designed and constructed.

5.3 NATIONAL REGISTER SIGNIFICANCE CRITERIA

This section evaluates the eligibility of the district for the NRHP.

5.3.1 Criteria A and B

Criteria A and B both measure the associative value of historic properties; that is, properties significant for their association or linkage to events (Criteria A) or persons (Criteria B) important in the past. Although the bridge is associated with engineering and design, mere association with these trends is inadequate. To qualify under Criterion A, "the property's specific association must be considered important as well. For example, a building historically in commercial use must be shown to have been significant in commercial history" (Shrimpton 2002). This bridge

itself did not play a significant role in national, state, or local history, and therefore does not qualify for the NRHP under Criterion A.

Criterion B applies to properties associated with individuals whose specific contributions to history can be identified and documented. Neither the bridge design nor construction can be ascribed to any particular individual. Therefore, the bridge does not qualify for the NRHP under Criterion B.

5.3.2 Criterion C

Resources are eligible under Criterion C, if they "embody the distinctive characteristics of a type, period, or method of construction."

Short-span suspension bridges were a popular choice in the early twentieth century for small-scale highway projects. Not only were they economical, but this type of bridge was logistically easier to construct in rural areas than other types of bridges. These factors made this type of bridge a good choice for carrying the PG&E pipeline over the Cosumnes River at this point. The area around the bridge is flooded for part of the year, making access difficult. At the time of construction, the river would have been navigable, and the nature of the short-span suspension bridge would have made it possible to use boats, if necessary, to import and/or maneuver equipment and parts. The bridge could have been built quickly and cheaply, with the knowledge that it was substantial enough to hold up to floods or other disasters. Lastly, the choice of poured concrete piers allowed the engineers to build the platform high enough to allow clearance for boats navigating the river. This bridge type was a perfect fit for the environment around the crossing.

Short-span suspension bridges were once common in many parts of the country. However, because of widening of roads and advances in transportation engineering, very few have survived. Only one bridge of this type, located on State Route 503 across the Lewis River in Cowlitz County, has been documented in Washington. It was constructed in 1932, contemporaneous with the subject bridge, and was rebuilt in 1957 and 1958. In California, the surviving short-span suspension bridges are all located in mountainous areas such as Siskiyou, Humboldt, and Butte counties (Caltrans 2006). These bridges, constructed between 1925 and 1938, illustrate the usefulness of this bridge type for road construction in difficult environments. However, the use of this bridge type for a pipeline crossing is unique. Æ contacted PG&E Archaeologist Glenn Caruso to ascertain if there were any other suspension bridges in the company system. At this time there are no other known suspension bridges that were constructed for PG&E natural gas pipelines (Caruso 2006). Therefore, the Line 108 bridge is considered to be a rare example of a narrow small-scale suspension bridge that was adapted to a specific engineering challenge, and is eligible for the NRHP under Criterion C.

5.3.3 Criterion D

A property is eligible under Criterion D if it contains or may yield information important in prehistory or history. The Line 108 bridge has the potential to contribute information important in the history of PG&E. Specifically, additional information about the engineering of natural gas pipelines during the 1930s could be gained through the detailed documentation of the Line 108

bridge. Because this type of bridge is now rare, it also contains important information in understanding how a short-span suspension bridge could be modified to meet environmental demands while still achieving its purpose of safely carrying a natural gas line across a potentially hazardous area. Therefore, the Line 108 suspension bridge is considered eligible under Criterion D.

5.4 INTEGRITY OF THE LINE 108 SUSPENSION BRIDGE

To be considered a historic property eligible for the NRHP, a resource must not only meet the significance criteria but also must retain integrity. Integrity is the ability of a property to convey its association with important historical themes, persons, designs, or technology (NPS 2002). Seven factors are considered when evaluating integrity of a site: location, design, setting, materials, workmanship, feeling, and association.

5.4.1 Location

Location is the place where the historic property was constructed or the place where the historic event occurred (NPS 2002). The Line 108 suspension bridge remains in the original location where it was built. It therefore retains integrity of location

5.4.2 Design

Design is the combination of elements that create the form, plan, space, structure, and style of a property. The design of the Line 108 Bridge remains the same as when it was first constructed. The only alteration has been the removal of the pipeline, which was accomplished without affecting the structural integrity of the bridge. Therefore, the bridge retains integrity of design.

5.4.3 Setting

Setting is the physical environment, or character, of a historic property and its surroundings. For a property to retain integrity of setting, buildings, structures, or features associated with a later development period should not have intruded upon the surrounding area to the extent that the original context is lost. The area surrounding the Line 108 bridge remains the same as it was when it was constructed. The northern terminus of the bridge is within the Cosumnes River Preserve which retains a natural state. The southern terminus is also in an area that retains is original setting. Therefore, the bridge retains integrity of setting.

5.4.4 Materials

The NPS (2002:Part VIII) defines materials as “the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.” The bridge contains the original external anchors, vertical hanger ropes, the main cables, the tower type, and wind-anchor cables, which are all the elements of a short-span suspension bridge. Although the pipeline has been removed and some of the wind-anchor cables are not extant, the bridge also has retained its integrity of materials.

5.4.5 Workmanship

NRHP-eligible properties should retain strong evidence of the original workmanship that was present during their period of significance. The original character of construction details should still be present and cannot have deteriorated or been disturbed to the extent that their value as examples of craftsmanship have been lost. Pride in workmanship is very evident and very much intact on the bridge. Although the bridge was constructed strictly for the purpose of carrying a pipeline across the river, and its rural location precluded many visitors, it is a visually appealing structure that stands as a monument to the skills required to build it.

5.4.6 Feeling

Feeling is the ability of the physical features of the property to convey the historic nature of the property. Even with the absence of the pipeline, the excellent integrity of the Line 108 bridge still conveys its purpose.

5.4.7 Association

Association is the link between a historic property and a significant event. To have integrity of association, the site must convey the relationship between the property and the events that took place there. An observer could easily understand the association between the property and the need to find a way to get a pipeline across the river.

5.4.8 Integrity Conclusions

As discussed above, the lack of surrounding development, coupled with the retention of original materials, has allowed this rare structure to remain untouched and retain all seven factors of integrity.

5.5 SUMMARY STATEMENT OF SIGNIFICANCE AND INTEGRITY OF THE STRUCTURE

The Line 108 Bridge served the important role of carrying the Vernalis-Sacramento natural gas line across the Cosumnes River. The local environment presented an unusual engineering challenge to the PG&E engineers. The engineers accomplished this feat by using a short-span suspension bridge, a bridge type commonly used for road projects. Because this type of bridge was economical and had been used successfully in other difficult environments, it was perfect for the job. Bridge and pipeline technology advanced rapidly after the bridge was constructed, but this bridge remains as a rare example of the ingenuity of 1930s engineers. Not only is this type of bridge rare across the United States, it may be either the only example or the only remaining example of a short-span pipeline suspension bridge in the PG&E system. This bridge contains important information about structural engineering in the early twentieth century. It is considered eligible for the NRHP under Criteria C and D. In addition, the property retains exceptional integrity of location, design, setting, materials, workmanship, feeling, and association.

5.6 RECOMMENDATIONS

The Line 108 short-span suspension bridge meets the requirements of eligibility for the NRHP as a significant structure under Criteria C and D. Because project plans call for removal of the bridge prior to the construction of a new pipeline, the bridge needs to be documented to Historic American Engineering Record (HAER) standards. Such recordation should include, but need not be limited to:

1. Additional research in PG&E archives to establish if this bridge was locally or regionally unique to the natural gas pipeline system, or if suspension bridges were standard features of the lines. The existence of other such bridges in the system, their location, and status of use should be documented through a comparison of historical documents and as-builts to the current property inventory.

2. Further documentation on the pipeline and bridge design, construction, and maintenance.

3. Large format photography of the bridge and its setting. This could entail the use of a boat to reach both sides of the bridge.

4. Measured drawings of the bridge, if as-builts cannot be found.

5. If the bridge is found to be unique, exploration of the feasibility of designing the replacement bridge in a similar style as the historic bridge.

If research finds that this is the only or best example of a pipeline suspension bridge, removal of the bridge would be a significant impact under Criterion C. If other pipeline suspension bridges exist and if those bridges are in good condition and are similar in type to the Line 108 suspension bridge, then the Line 108 bridge would not be unique nor would it be the best example of this engineering type and Criterion C would not apply. Under Criterion D, compilation of HAER-level documentation of the bridge would then reduce the impact that would be caused by demolition, but not to less than a significant level.

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